



Assessing spillover effects of bed nets on Malaria

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Abstract:

Assessing population-level effects of vaccines and other infectious disease prevention measures is important to the field of public health. In infectious disease studies, one person's treatment may affect another individual's outcome, i.e., there may be interference between units. For example, use of bed nets to prevent malaria by one individual may have an indirect or spillover effect to other individuals living in close proximity. In some settings, individuals may form groups or clusters where interference only occurs within groups, i.e., there is partial interference. In this presentation, we consider extensions of Robins' g-methods to allow for partial interference. The large sample properties of the estimators will be discussed, and simulation studies presented demonstrating the finite-sample performance of the methods. Analysis of data from the Demographic and Health Survey from the Democratic Republic of the Congo will be presented assessing the overall and spillover effects of bed net use on malaria.

Keywords:

causal inference; g-methods; herd immunity; observational studies; spillover